09/991,001   Attorney Docket No. 14025
                                                                              1840-045

CLAIM AMENDMENTS

Please amend Claims 6-11, and 22 - 23 as follows:

1. (Canceled)

2. (Previously Presented) A reagent according to claim 22, wherein said alkali metal ions are selected from the group consisting of ions of sodium and potassium; said alkaline earth metal ions are selected from the group consisting of ions of calcium and magnesium; and said halide ions are chloride ions.

3. (Previously Presented) A reagent according to claim 22, wherein said saccharides are selected from the group consisting of glucose, fructose, lactose and galactose.

4. (Withdrawn) A reagent according to claim 22, wherein said enzymes are selected from the group consisting of alkaline phosphatase, alanine aminotransferase, aspartate aminotransferase, amylase, cholinesterase, creatine kinase, gamma-glutamyl transferase, lactate dehydrogenase and lipase.

5. (Previously Presented) A reagent according to claim 22, wherein said sensor particles have a size in the range from about 0.1 µm to about 50 µm.

6. (Currently Amended) A reagent according to claim 22, which comprises, for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b) and (c), wherein classes (a), (b) and (c) are:

   (a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

   (b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

   (c) enzyme-sensor particles which interact specifically with at least one enzyme in a fluid,

   wherein each sensor particle is capable of interacting specifically with a corresponding

target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

7. (Currently Amended) A reagent ~~according to claim 22, which comprises~~, for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b), and (d), wherein classes (a), (b), and (d) are:

(a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

(b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

(d) antigen- or antibody sensor particles which interact specifically with at least one antigen or antibody in a fluid,

wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

8. (Currently Amended) A reagent ~~according to claim 22, which comprises~~, for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b) and (e), wherein classes (a), (b) and (e) are:

(a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

(b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

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(e) nucleotide sequence-sensor particles which interact specifically with at least one nucleotide sequence in a fluid,

wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

9. (Currently Amended) A reagent ~~according to claim 22, which comprises~~, for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b), (c) and (d), wherein classes (a), (b), (c) and (d) are:

(a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

(b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

(c) enzyme-sensor particles which interact specifically with at least one enzyme in a fluid; and

(d) antigen- or antibody sensor particles which interact specifically with at least one antigen or antibody in a fluid,

wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

10. (Currently Amended) A reagent ~~according to claim 22, which comprises~~, for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b), (c) and (e), wherein classes (a), (b), (c) and (e) are:

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(a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

(b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

(c) enzyme-sensor particles which interact specifically with at least one enzyme in a fluid; and

(e) nucleotide sequence-sensor particles which interact specifically with at least one nucleotide sequence in a fluid,

wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

11. (Previously Presented) A reagent ~~according to claim 22, which comprises,~~ for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b), (d) and (e), wherein classes (a), (b), (d) and (e) are:

(a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

(b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

(d) antigen- or antibody sensor particles which interact specifically with at least one antigen or antibody in a fluid, and

(e) nucleotide sequence-sensor particles which interact specifically with at least one

nucleotide sequence in a fluid,

    wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

    12. (Canceled)

    13. – 21. (Withdrawn)

    22. (Currently Amended) A reagent for measuring target analytes in a test sample, said reagent comprising a reagent mixture of different classes of sensor particles in a fluid, the reagent mixture comprising at least one type of sensor particle selected from each of the classes (a), (b), (c), (d), and (e), wherein classes (a), (b), (c), (d), and (e) are:

    (a) ion-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of alkali metal ions, alkaline earth metal ions, ammonium, halide ions, oxygen, pH; and carbon dioxide; and

    (b) metabolite-sensor particles which interact specifically with at least one analyte in a fluid, where the analyte is selected from the group consisting of saccharides, ammonia, urea, uric acid, cholesterol, triglycerides, ethanol, lactate, salicylate, acetaminophen, bilirubin, and creatinine; and

    at least one of

    (c) enzyme-sensor particles which interact specifically with at least one enzyme in a fluid; and

    (d) antigen- or antibody sensor particles which interact specifically with at least one antigen or antibody in a fluid; or and

    (e) nucleotide sequence-sensor particles which interact specifically with at least one nucleotide sequence in a fluid,

    wherein each sensor particle is capable of interacting specifically with a corresponding target analyte, and capable of producing a fluorescent signal following interaction with the corresponding target analyte.

    23. (Currently Amended) A reagent according to Claim 22 wherein:

    (a) the ion-sensor particles comprise a plurality of at least one type of sample-

insoluble particles having associated therewith a target ionophore adapted to interact with a target ion in the sample, and a first emitted fluorescent signal following interaction of the target ionophore with a target ion;

(b) the metabolite-sensor particles comprise a plurality of at least one type of sample-insoluble particles having associated therewith a ligand adapted to interact with a target metabolite in the sample to produce a second fluorescent signal following interaction of the ligand with the target metabolite;

(c) the enzyme-sensor particles comprise a plurality of at least one type of sample-insoluble particles having associated therewith a fluorogenic substrate adapted to interact with a target enzyme in the sample to produce a third fluorescent signal;

(d) the antigen- or antibody-sensor particles comprise a plurality of at least one type of sample-insoluble particles having associated therewith an immobilized pair member adapted to interact to form a complex with a complementary target antigen or a complementary antibody and to produce a fourth fluorescent signal following interaction of the pair member with the complementary target antigen or complementary antibody; and

(e) the nucleotide sequence-sensor particles comprise a plurality of at least one type of sample-insoluble particles having associated therewith a polynucleotide molecule complementary to a target nucleotide sequence and capable of hybridizing with the target nucleotide sequence under hybridizing conditions, and a fluorescent signal material that produces a fifth fluorescent signal upon hybridization between the complementary polynucleotide molecule and the target nucleotide sequence.

24. (Withdrawn) A method for assaying multiple analytes in a test sample, said method comprising:

(1) admixing a test sample containing multiple analytes to be measured with a reagent for measuring target analytes according to Claim 22, wherein each sensor particle comprises coding indicia which confer uniquely identifying optical properties on that type of particle and a measurement substrate which specifically interacts with an analyte of interest such that measurement of the optical properties of said substrate are varied;

(2) allowing the resulting admixture to incubate for a period of time sufficient for each

type of sensor particle to interact with the analyte with which it specifically interacts to vary the optical properties measurement of the sensor particle;

(3) transferring the admixture to a reading device and reading both the coding and the optical properties measurement of each sensor particle individually;

(4) storing the measured optical properties of each sensor particle type according to the optical properties coding read from the particles; and

(5) processing the stored measurements for each sensor particle type to obtain an assay result for the analyte associate with each type of sensor particle.

25. (Withdrawn) A method according to claim 24, wherein said alkali metal ions are selected from the group consisting of ions of sodium and potassium; said alkaline earth metal ions are selected from the group consisting of ions of calcium and magnesium; and said halide ions are chloride ions.

26. (Withdrawn) A method according to claim 24, wherein said saccharides are selected from the group consisting of glucose, fructose, lactose and galactose.

27. (Withdrawn) A method according to claim 24, wherein said enzymes are selected from the group consisting of alkaline phosphatase, alanine aminotransferase, aspartate aminotransferase, amylase, cholinesterase, creatine kinase, gamma-glutamyl transferase, lactate dehydrogenase and lipase.

28. (Withdrawn) A method according to claim 24, wherein said reading device is a flow cytometer, said measurement optical properties of said particles are fluorescence, and said reading step is carried out by measuring the fluorescence of each type of sensor particle.